

**IN THE UNITED STATES DISTRICT COURT FOR
THE MIDDLE DISTRICT OF ALABAMA
NORTHERN DIVISION**

GINGER CRAVEY, as Administratrix of the Estate of RILEY CRAVEY, Deceased,) Civil Action No.: 2:06-CV-191-WKW-DRB
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)
MELANIE CHAMBERS, who sues by and through her Mother and next of friend, GAIL TATUM,) Civil Action No.: 2:06-CV-83-WKW-CSC
)
)
SHERRI DAVIS, JAMES ALLEN, YANCEY BROOKS, JAMES CARRAWAY, SANDRA COBB, KANDY CREECH, DOROTHY DeVAUGHN, DEBORAH REYNOLDS, and EARLIE MAE THOMAS,) Civil Action No.: 2:06-CV-187-WKW-SRW
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THOMAS DOUGLAS, as Administrator of the Estate of SEBERA GAYLE DOUGLAS, Deceased,) Civil Action No.: 2:06-CV-188-WKW-SRW
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STANTON KELLEY, as Administrator of the Estate of WILLENE KELLEY, Deceased,) Civil Action No.: 2:06-CV-190-WKW-VMP
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JANICE MADDEN, as Administratrix of the Estate of JAMES MADDEN, Deceased,) Civil Action No.: 2:06-CV-186-WKW-CSC
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LILLIAN EDWARDS, as Administratrix of the Estate of MARVIN MAYS, Deceased,) Civil Action No.: 2:06-CV-86-WKW-CSC
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RICKEY PHILLIPS, as Administrator of the Estate of SUSAN PHILLIPS, Deceased,) Civil Action No.: 2:06-CV-84-WKW-CSC
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LORRINE THOMPSON, as Administratrix of the Estate of JERRY THOMPSON, Deceased,) Civil Action No.: 2:06-CV-189-WKW-VMP
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)
SARAH K. THOMPSON, as Administratrix of the Estate of ROYCE THOMPSON, Deceased,) Civil Action No.: 2:06-CV-85-WKW-SRW
)

Plaintiffs,)
vs.)
PACTIV CORPORATION, et al.,)
Defendants)

**AFFIDAVIT OF
PAUL ROSENFELD, PH.D.**

STATE OF CALIFORNIA)
:)
LOS ANGELES COUNTY)

**BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, PERSONALLY
APPEARED PAUL ROSENFELD, Ph.D., WHO BEING BY ME FIRST DULY SWEORN,
DEPOSED AND STATED AS FOLLOWS:**

“My name is Dr. Paul Rosenfeld. I am a resident of Los Angeles County, California, and my office address is 201 Wilshire Blvd., Santa Monica, California 90401. I am of sound mind, capable of making this Affidavit, and personally acquainted with the facts stated herein.”

“I received a B.A. in Environmental Studies from the University of California Santa Barbara in 1991, an M.S. in Environmental Science from the University of California Berkeley 1995, and a Ph.D. in Soil Chemistry from the University of Washington in 1999.”

“I am currently an environmental chemist at SWAPE, Inc. (Soil, Water, and Air Protection Enterprises, Inc.), a technical consultation and data analysis firm, as well as an adjunct professor at UCLA’s School of Public Health.”

“In addition to my education, I also have extensive experience in evaluating the fate and transport of environmental contaminants, risk and exposure assessment of contaminants released from pollution sources, and monitoring and modeling of those pollution sources that may have had an impact on human health, ecological systems, and/or neighboring properties. I have knowledge and understanding of, and I use my education, experience, and expertise to conduct investigations and draft extensive risk assessments. I have performed such investigation and assessment for both government and private entities concerning risks to human health and properties due to contamination from pesticides, PCBs, dioxins, furans, volatile organics, chlorinated solvents, perchlorate, heavy metals, asbestos, PDBE, PFOA, and many other hazardous substances.”

"I obtained much of my experience in evaluating contaminated sites while working for the United States Navy. I served as a Remedial Project Manager for Navy Base Realignment and Closure Team (BRAC) South West Division on Treasure Island, California, managing multiple sites with multiple contaminants including dioxins and polycyclic aromatic hydrocarbons (PAHs), designing landfill caps for the Navy BRAC Pacific Division in Orote, Guam, and restoring a 26-mile petroleum pipeline at Marine Base Camp Pendleton, California. My credentials are more fully set forth in the attached Curriculum Vitae, consisting of 16 pages."

"I have been engaged by the Colom Law Firm, L.L.C. and Environmental Litigation Group, P.C. as an expert witness in the above-styled action for the purpose of evaluating and determining the extent to which the plaintiffs, residents of Florala and Lockhart, Alabama, have been exposed to hazardous substances released from the Releasing Facility."

"I have performed an independent investigation and assessment of the former Louisiana-Pacific wood treatment facility located between the towns of Florala and Lockhart in Alabama (hereinafter the "Releasing Facility") and the neighboring communities of Lockhart and Florala, and in connection with that investigation and assessment, I have reviewed documents too numerous to list individually in this affidavit, but which fall into the following general categories:"

1. "Regulatory documents that were obtained from the Alabama Department of Environmental Management (ADEM)."
2. "Regulatory documents that were obtained from the United States Environmental Protection Agency (EPA)."
3. "Pleadings, exhibits and admissions in a matter before the United States Environmental Protection Agency, Region IV, regarding Louisiana-Pacific Corporation, Lockhart, Alabama, Docket No. 85-54-R."
4. Historic aerial photograph of the Releasing Facility and of the surrounding area.
5. I relied on EPA criteria noting that EPA Region 4 (which oversees Alabama) suggests that individuals should use EPA Region 9 clean up criteria or Preliminary Remediation Goals (PRGs). In EPA Region 9, Military Installations (or any site for that matter) with over 3.9 picograms/kilogram TEQs dioxin in residential soil generally require remediation according to published PRGs. The current Region 9 table can be found on the EPA Region 9 Web site at: <http://www.epa.gov/region09/waste/sfund/prg/>. The EPA Region 4 website which states this can be found at <http://www.epa.gov/region4/waste/ots/healtblul.htm>."

6. "In order to determine what the background concentration of dioxins and furans in the United States population in blood lipid, I relied on the "Third National Report on Human Exposure to Environmental Chemical" published in July 2005 by the Centers for Disease Control and Prevention (CDC). I also relied on the "Draft Dioxin Reassessment" to determine TEQ values for dioxins and furans. This document was published by the Environmental Protection Agency (EPA) in September 2000."

"I reviewed the following affidavits and recorded statements:"

1. "Affidavit of former Releasing Facility manager, Roy Exell."
2. "Affidavit of former Releasing Facility employee, Roy Hall."
3. "Affidavit of former Releasing Facility employee, Jacky Partridge."
4. "Affidavit of former Releasing Facility employee, John 'Buck' Roberts."

"In addition to reviewing the documents listed above, I have individually conducted, supervised, or ordered the following scientific tests:"

1. "I individually collected dust samples from the homes of the plaintiffs and in some cases their neighbors in accordance with ASTM Standard D-5438-94 (required for a CERCLA investigation) using a high volume sampler, model HVS4. I sent the dust samples I collected to Severn Trent Laboratories, Inc. in Sacramento, California for chemical analysis."
2. "I arranged for Florala Memorial Hospital to collect blood samples from individual plaintiffs or members of their households and to send them to Severn Trent Laboratories, Inc. in Sacramento, California for chemical analysis."

"The Releasing Facility is a wood treatment operation covering more than 20 acres originally owned and operated by Lockhart Lumber but later sold to and operated by TMA Forest Products. Louisiana-Pacific Corporation maintained full operational control of the Releasing Facility from approximately 1983 until operations ceased in 1998."

"During its operational history, the Releasing Facility used substantial quantities of creosote, pentachlorophenol (PCP), and copper-chromate arsenate (CCA). According to the records I reviewed, wastewater generated during wood treatment operations was initially directed to a treatment pond, and sludge from that pond, treated wood scraps, and other waste was incinerated in two boilers and at least one teepee burner. Ordinarily the incineration of waste capable of emitting significant particulate matter, polycyclic aromatic hydrocarbons, dioxins,

furans, heavy metals, and other hazardous substances requires the use of emission control devices. Based on available records, there were no emission control devices attached to the boilers and teepee burner(s) other than a light detection system."

"The Releasing Facility is located primarily within a residential community and is bordered by residences on all sides. One commercial property borders the Releasing Facility on its east side. The plaintiffs' residences are located from within a few hundred feet to approximately 1½ miles from the borders of the Releasing Facility."

"There are no other potential emitting releasing facility sources within several miles of the Releasing Facility or neighboring communities."

"Throughout its operations, the Releasing Facility generated significant quantities of hazardous waste, including creosote, pentachlorophenol, copper-chromate arsenate, polycyclic aromatic hydrocarbons, benzene, dioxins, furans, chromium, arsenic, heavy metals, and other hazardous substances."

"Wood treatment operations using creosote, pentachlorophenol, and copper-chromate-arsenate are of utmost concern because of the significant threat these chemicals pose to humans, animals, and ecological systems. The contaminants of concern which were released by the Releasing Facility are recognized as known or likely human carcinogens and are listed as such by the United States Environmental Protection Agency under federal statutes which require the EPA to make a determination of the most toxic substances and report which are carcinogenic chemicals."

"Creosote is a complex and variable mixture consisting of approximately 75% polycyclic aromatic hydrocarbon derivatives of coal tar, including benzo(a)pyrene, anthracene, naphthalene, phenanthrene, acenaphthene, fluorine, and pyridine. Many of these chemical structures are carcinogenic and other notable conditions including birth defects in human and animals have been documented.^{1,2}"

1. EPA Working Group, *Health Effects Assessment for Creosote*, Environmental Protection Agency Vol: EPA/600/8-88/025 (1987) p. 27: "...U.S. EPA (1984b) reported that creosote poses a significant risk of oncogenicity to humans and developed regulations to limit exposure ... The oral route of exposure should be the primary route investigated, although inhalation exposure also occurs, particularly in wood-treating facilities ... U.S. EPA (1982) noted that creosote contains several known carcinogens as well as related chemicals that may act as cocarcinogens, initiators, promoters, potentiators or inhibitors of carcinogenesis..."

2. Rom, WN, *Polycyclic Aromatic Hydrocarbons*, Environmental and Occupational Medicine, pages 535-540, 35 references, 1983: "... Epidemiologic studies are cited which showed increased mortality from cancers of the lung, nasal cavity, sinuses, and skin in counties where the petroleum industry was most heavily concentrated. Increased brain tumor incidence in children is also associated with petrochemical processing. The author concludes that many PAHs are potent carcinogens, and many processes in a variety of workplaces are contaminated with PAHs ..."

"Pentachlorophenol, as is coal tar creosote, is a manufactured chemical and is a registered biocide (or pesticide). According to the Center for Disease Control, Agency for Toxic Substances Disease Registry (ATSDR), pentachlorophenol most often contains the impurities polychlorinated dibenzo-*p*-dioxins (dioxins) and dibenzofurans (furans). These compounds have varying harmful effects. They are produced naturally as well as by human activities such as industrial, municipal, and domestic incineration and combustion processes and the manufacture of chlorinated phenols and other chlorinated chemicals like pentachlorophenol.^{3,4}"

"Polychlorinated dibenzofurans are a family of 135 individual compounds with varying harmful health and environmental effects. The processes that emit the unwanted dibenzofurans are much the same as those that emit dibenzo-*p*-dioxins. During the wood treatment process, pentachlorophenol is mixed with wood treatment oil that contains polycyclic aromatic hydrocarbons. Polycyclic aromatic hydrocarbons, as well as pentachlorophenol, can be released during the process of heating the pentachlorophenol and treating oil solution mixtures, ill advised open burning, and spilling.⁵"

"Coal tar creosote, pentachlorophenol, polychlorinated dibenzo-*p*-dioxins, dibenzofurans, and polycyclic aromatic hydrocarbons are considered hazardous substances and subject to application of the COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (hereinafter "CERCLA"). Sections 9601 and 9602 of CERCLA identify all of these substances as "hazardous" pursuant to the following laws:

3. Dougherty, RC, *Pentachlorophenol: Chemistry, Pharmacology, and Environmental Toxicology; Environmental Science Research*, Vol. 12, pages 351-361, 48 references, 1978-1978: "... Pentachlorophenol has been shown to be mutagenic in bacterial test systems. Its major toxic effect on biological systems may be due to its influence on membrane properties and ability to uncouple oxidative phosphorylation. It is noted that the toxic effects of pentachlorophenol cannot be divorced from the effects of the dioxins that contaminate the commercial formulations. The author concludes that current human exposure to pentachlorophenol poses a significant health hazard..."

4. Chemicalweek 133(5):15, 1983, *Dioxin exposure has been linked to soft-tissue sarcoma*: "... Chemical plant workers are subject to this unusual form of cancer which attacks muscles, nerves, and soft tissues ... The National Institute for Occupational Safety and Health (NIOSH) developed the study that compiled health information on workers involved in the production of trichlorophenol (TCP), 2,4dichlorophenoxyacetic acid (2,4-D), 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and pentachlorophenol. 2,3, 7,8-tetrachlorodibenzo-*p*-dioxin (2,3,7, 8-TCDD), or dioxin, is a byproduct of TCP, 2,4,5-T, and pentachlorophenol. The NIOSH study results have instigated further monitoring of workers exposed to dioxin..."

5. International Agency for Research on Cancer (IARC) Monographs on the evaluation of the carcinogenic risk of chemicals to humans Vol:Suppl. 7 (1987), pp 322-6, *Polychlorinated biphenyls (Group 2A)*: "... Evidence for carcinogenicity to humans. Information on the possible carcinogenic risk of human exposure to polychlorinated biphenyls (PCBs) comes from studies of occupational populations and of populations exposed to the compounds accidentally. PCB mixtures may be contaminated with polychlorinated dibenzofurans and polychlorinated dibenzodioxins (see, e.g. p. 350)..."

1. "Section 311(b)(2)(A) of the FEDERAL WATER POLLUTION CONTROL ACT, 33 USCS § 1321(b)(2)(A)."
2. "Section 3001 of the SOLID WASTE DISPOSAL ACT, 42 USCS § 6921."
3. "Section 307(a) of the FEDERAL WATER POLLUTION CONTROL ACT, 33 USCS § 1317(a)."
4. "Section 112 of the CLEAN AIR ACT, 42 USCS § 7412."
5. "TOXIC SUBSTANCES CONTROL ACT, 15 USCS §§ 2606, et seq."
6. "RESOURCE CONSERVATION RECOVERY ACT § 3001"

"The Releasing Facility falls squarely within the definition of a CERCLA-defined facility that did not operate as a petroleum manufacturer or petroleum processor, with identifiable releases of wood treatment chemicals, including, without limitation, creosote, creosote constituents, dioxins, furans, pentachlorophenol, copper-chromate arsenate, arsenic, hexavalent chromium, and other hazardous substances. These hazardous substances were continuously released into the environment and entered the air, groundwater, and soils making up the towns of Lockhart and Flora."

"Employees at the Releasing Facility daily removed ashes contaminated with arsenic, chromium, PAH's, dioxins, furans, and other toxicants that will not incinerate in the boilers and teepee burner(s) and spread the ashes directly onto several acres of the ground constituting the Releasing Facility. In spite of reports to ADEM and the EPA that hazardous waste would be transported off-site for proper disposal, hazardous waste was disposed of by burning, burying or spreading on-site. Because of this practice, and as a result of natural environmental events, including without limitation, wind, rain, storms, and other natural phenomena, elemental heavy metals, including arsenic, dioxins, polycyclic aromatic hydrocarbons, copper-chromate arsenate, and pentachlorophenol, would have continuously been released into the environment for many years after the Releasing Facility ceased operations or until proper remediation."

"The dust samples and blood samples collected in connection with my investigation provide an indirect measure of air pollution over time and, together with other factors, provide data sufficient to establish exposure to industrial pollution.⁶ The results from the analysis of these samples are extraordinarily significant, perhaps even unique."

6. Davis JJ, Gulson BL., *Environ Res*. 2005 Oct; 99(2): 177-94. Epub 2005 Jan 8., *Ceiling (attic) dust: a "museum" of contamination and potential hazard*: "...Ceiling dusts pose a probable health hazard if the dust is disturbed and allowed to plume within the living areas of a dwelling, thereby exposing the occupants, especially children, to elevated levels of metals and fine particulates. Modeling shows that exposure to the elevated levels of Pb in dust could give rise to blood lead concentrations exceeding current guidelines for the industrial and semi-industrial areas ..."

1. Remediation of residential soil is typically required when the soil concentration exceeds 3.9 picograms/kilogram TEQs of dioxin and dioxin-like compounds according to the EPA Region 9 PRGs, which are used by EPA Region 4. Attic dust represents a human health risk similar to residential soil, which combines the risk of soil/dust inhalation, soil/dust ingestion, and the dermal exposure to contaminated soil/dust. The average attic dust sample contained 151 picograms/kilogram TEQs (approximately 38 times higher than the EPA Region 9 PRG value), necessitating cleanup. In my opinion, each home sampled needs to have the attic thoroughly cleaned by trained specialists immediately. One home near the facility had the highest dioxin TEQ values I have seen in my professional career (501 TEQs). In addition, each home sampled exceeds EPA Region 9 clean up levels for arsenic, and all but 2 homes exceeds EPA Region 9 clean up levels for PAHs.
2. The average concentration of dioxin/furans in the blood lipid of the 21 residents tested in Florala, Alabama exceeds the 90th percentile blood lipid concentration of the most dioxin/furan-contaminated individuals in the United States. In order to show this I relied on the "Third National Report on Human Exposure to Environmental Chemicals" published in July 2005 by the Department of Health and Human Services, Centers for Disease Control and Prevention (CDC). This study is the largest of its kind in the United States. Chemicals or their metabolites were measured in blood and urine samples from random samples of participants from the National Health and Nutritional Examination Survey (NHANES) conducted by CDC's National Center for Health Statistics.

In this study, approximately 3,162 people were sampled for dioxins/furans in blood in 1999-2000 and 2001-2002. The data was compiled and the report provides the geometric mean, 50th, 75th, 90th and 95th percentiles of the concentration of dioxin/furans for the United States population in blood (based on TEQs of dioxin furans in pg/g of lipid or parts per trillion on a lipid-weight basis). Again, the average concentration of dioxin/furans in the blood lipid of the 21 residents sampled in Florala, Alabama exceeds the 90th percentile blood lipid concentrations of the most dioxin/furan-contaminated individuals in the United States. United States EPA TEQ values were acquired using the "Draft Dioxin Reassessment" to determine TEQ values for dioxins and furans.

"Because of the extraordinary nature of the results of the tests on the dust and blood samples, responsible government authorities should conduct a further, more extensive investigation of the Releasing Facility, its owners and operators, and the environment of Florala and Lockhart."

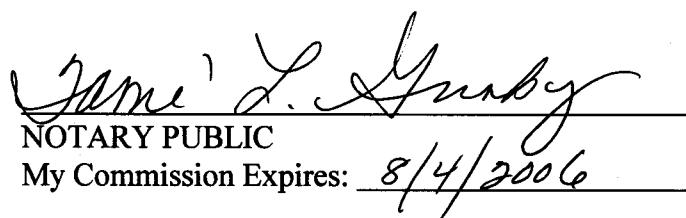
"Based on my review of scientific and medical literature, I believe, to a reasonable degree of scientific probability, that the level of airborne dioxins, furans, polycyclic aromatic hydrocarbons, and other hazardous substances originating from the Releasing Facility were released into the environment of Lockhart and Florala from at least the late 1970's through the present."

FURTHER THE AFFIANT SAYETH NOT.



Paul Rosenfeld, Ph.D.

SWORN TO AND SUBSCRIBED before me, the undersigned authority, by Paul Rosenfeld, Ph.D. on this the 20th day of April 2006.



Tami L. Gunby
NOTARY PUBLIC
My Commission Expires: 8/4/2006